CLAIMS:

1. A task scheduling apparatus for parallelly processing a plurality of tasks assigned with priorities and including one or more tasks each having one or more signal handlers assigned with priorities, comprising:

a signal-handler registering section for registering the respective signal handlers of the one or more tasks, signals corresponding to the respective signal handlers and the priorities of the respective signal handlers while relating them to each other;

a signal generating section for generating a signal; and

a selection executing section for specifying an object signal handler as a signal handler corresponding to the generated signal and a priority thereof by referring to contents registered by the signal-handler registering section, and executing the one having a highest priority out of the plurality of tasks and the object signal handler.

2. A task scheduling apparatus according to claim 1, further comprising a priority table for recording the plurality of tasks and the priorities thereof while relating them to each other and recording the object signal handler and the priority thereof while relating them to each other,

wherein the selection executing section includes:

a signal notifying section for specifying the object signal handler and the priority thereof by referring to the contents registered by the signal-handler registering section, and recording the object signal handler and the priority thereof in the priority table while relating them to each other;

a selecting section for selecting a task or a signal handler corresponding to the highest one of a plurality of priorities recorded in the

priority table as an object to be executed by referring to the priority table; and

an executing section for executing the task or the signal handler selected by the selecting section.

3. A task scheduling apparatus according to claim 2, wherein the signal notifying section deletes the recorded content relating to the signal handler whose execution has been completed from the priority table when the executing section completes the execution of the signal handler.

4. A task scheduling apparatus according to claim 1, further comprising a priority table for recording the plurality of tasks and the priorities thereof while relating them to each other, wherein:

the signal-handler registering section further registers tasks corresponding to the respective signal handlers while relating them to each other; and

the selection executing section includes:

a signal notifying section for specifying the object signal handler, an object priority which is the priority of the object signal handler, and an object task which is a task corresponding to the object signal handler by referring to the contents registered by the signal-handler registering section,

a priority changing section for changing the priority of the object task out of the plurality of tasks recorded in the priority table to the object priority,

a selecting section for selecting a task corresponding to the highest one of a plurality of priorities recorded in the priority table as an object to be executed by referring to the priority table, and

an executing section for executing the selected task if the task selected by the selecting section is not the object task while executing the object signal handler if the selected task is the object task.

5. A task scheduling apparatus according to claim 4, wherein the priority changing section resets the priority of the object task corresponding to the object signal handler whose execution has been completed, out of the plurality of tasks recorded in the priority table, to the one before it had been changed to the object priority when the executing section completes the execution of the object signal handler.

6. A task scheduling apparatus according to claim 1, further comprising a priority table for recording the plurality of tasks and the priorities thereof while relating them to each other, wherein:

the plurality of tasks include a signal-handler processing task which is assigned with a variable priority, includes a queue in which at least one signal handler to be executed is registered, and causes executed a highest priority handler having a highest priority out of the at least one signal handler registered in the queue upon being called and executed;

the selection executing section includes:

a signal notifying section for specifying the object signal handler by referring to contents registered by the signal-handler registering section and registering the object signal handler in the queue,

a priority changing section for specifying the highest priority handler out of the at least one signal handler registered in the queue by referring to the contents registered by the signal-handler

registering section when the content registered in the queue has been changed, and changing the priority of the signal-handler processing task recorded in the priority table to the priority of the specified highest priority handler,

a selecting section for selecting the task corresponding to the highest one of a plurality of priorities recorded in the priority table as an object to be executed by referring to the priority table, and

an executing section for executing the task selected by the selecting section.

7. A task scheduling apparatus according to claim 6, wherein the signal-handler processing task deletes the registration of the highest priority handler whose execution has been completed from the queue when the execution of the highest priority handler is completed.

8. A task scheduling apparatus according to any one of claims 2 to 7, further comprising a task registering section for registering the priorities of the one or more tasks in the priority table upon a registration instruction from the one or more tasks.

9. A task scheduling apparatus according to claim 8, wherein the task registering section changes the priorities of the one or more tasks registered in the priority table upon a change instruction from the one or more tasks.

10. A task scheduling apparatus according to claim 9, further comprising:

a buffer for temporarily storing data outputted from a specific task which is one of the one or more tasks, and

a buffer administering section for making a notification to the signal generating section when an amount of the data stored in the buffer falls below a predetermined reference amount,

wherein the specific task includes a specific signal handler for causing the task registering section to change the priority of the specific task registered in the priority table to a higher value by giving an instruction to the task registering section, and the signal generating section generates a signal corresponding to the specific signal handler upon receiving the notification.

11. A task scheduling apparatus according to any one of claims 1 to 10, further comprising a signal-handler table in which the signal-handler registering section registers the respective signal handlers of the one or more tasks, the signals corresponding to the respective signal handlers and the priorities of the respective signal handlers while relating them to each other, wherein the selection executing section refers to the signal-handler table as the contents registered by the signal-handler registering section.

12. A task scheduling method for parallelly processing a plurality of tasks assigned with priorities and including one or more tasks each having one or more signal handlers assigned with priorities, comprising:

a signal-handler registering step of registering the respective signal handlers of the one or more tasks, signals corresponding to the respective signal handlers and the priorities of the respective signal handlers while relating them to each other;

a signal generating step of generating a signal; and

a selection executing step of specifying an object signal handler as a signal handler corresponding to the generated signal and a priority thereof by

referring to contents registered by the signal-handler registering step, and executing the one having a highest priority out of the plurality of tasks and the object signal handler.

13. A task scheduling program for causing a computer to function as a task scheduling apparatus for parallelly processing a plurality of tasks assigned with priorities and including one or more tasks each having one or more signal handlers assigned with priorities, the computer functioning as:

a signal-handler registering means for registering the respective signal handlers of the one or more tasks, signals corresponding to the respective signal handlers and the priorities of the respective signal handlers while relating them to each other;

a signal generating means for generating a signal; and

a selection executing means for specifying an object signal handler as a signal handler corresponding to the generated signal and a priority thereof by referring to contents registered by the signal-handler registering means, and executing the one having a highest priority out of the plurality of tasks and the object signal handler.

14. A computer-readable storage medium storing a task scheduling program for causing a computer to function as a task scheduling apparatus for parallelly processing a plurality of tasks assigned with priorities and including one or more tasks each having one or more signal handlers assigned with priorities, the computer functioning as:

a signal-handler registering means for registering the respective signal handlers of the one or more tasks, signals corresponding to the respective signal handlers and the priorities of the respective signal handlers while

relating them to each other;

a signal generating means for generating a signal; and

a selection executing means for specifying an object signal handler as a signal handler corresponding to the generated signal and a priority thereof by referring to contents registered by the signal-handler registering means, and executing the one having a highest priority out of the plurality of tasks and the object signal handler.

15. A transmission medium holding a task scheduling program for causing a computer to function as a task scheduling apparatus for parallelly processing a plurality of tasks assigned with priorities and including one or more tasks each having one or more signal handlers assigned with priorities, the computer functioning as:

a signal-handler registering means for registering the respective signal handlers of the one or more tasks, signals corresponding to the respective signal handlers and the priorities of the respective signal handlers while relating them to each other;

a signal generating means for generating a signal; and

a selection executing means for specifying an object signal handler as a signal handler corresponding to the generated signal and a priority thereof by referring to contents registered by the signal-handler registering means, and executing the one having a highest priority out of the plurality of tasks and the object signal handler.